



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,863	02/27/2004	Joseph H. Sassine	169.12-0600	7195

164 7590 12/10/2007
KINNEY & LANGE, P.A.
THE KINNEY & LANGE BUILDING
312 SOUTH THIRD STREET
MINNEAPOLIS, MN 55415-1002

EXAMINER

WATKO, JULIE ANNE

ART UNIT	PAPER NUMBER
----------	--------------

2627

MAIL DATE	DELIVERY MODE
-----------	---------------

12/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/788,863	Applicant(s) SASSINE ET AL.	
	Examiner Julie Anne Watko	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-16,18-20 and 26-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-16,18-20 and 26-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/27/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application, |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-3, 5-11, 13-16, 18-20, 26, 28-29, 31-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims merely setting forth physical characteristics desired in article, and not setting forth specific compositions which would meet such characteristics, are invalid as vague, indefinite, and functional since they cover any conceivable combination of materials either presently existing or which might be discovered in future and which would impart desired characteristics. Ex parte Slob (BPAI) 157 USPQ 172. Thus, the metes and bounds of the claim cannot be determined by a person of ordinary skill in the art.

For examination purposes, the indefinite claims shall be interpreted as limited to laminates of stainless steel and damping materials.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 5-16, 18-20 and 26-32, to the extent understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyagi et al (US Pat. No. 6222704 B1) in view of Nakamura et al (US Pat. No. 6212043 B1).

As recited in independent claim 1, to the extent understood, Aoyagi et al show a head suspension assembly, comprising: a beam component having a front end and a rear end; a hinge component near the rear end of the beam component for connecting to an actuation arm; and a gimbal component near the front end of the main beam section for carrying a transducing head; wherein the hinge component comprises a first structural damping material (including layers of stainless steel (23 and 33), copper (31), and other materials (34), such as those listed in col. 4, lines 6-8, "polymide, epoxy resin, polyetherurethane, rubber, silicone rubber, polyvinylchloride or polybutadiene") and the gimbal component comprises a second structural damping material (a laminate of stainless steel (23 and 33), copper (31), and other materials (34), such as those listed in col. 4, lines 6-8).

As recited in claim 1, to the extent understood, Aoyagi et al are silent regarding the claimed ranges of modulus of elasticities and damping capacities.

As recited in claim 1, to the extent understood, Nakamura et al show moduli of elasticity within the claimed range (see especially Table 1; see also col. 2, lines 14-21, "The rigidity exceeding 100 kg/mm is not desirable, because the spring constant of the head suspension becomes too high"; see also response to arguments below).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to achieve moduli of elasticity of $7000 \text{ kg/mm}^2 = 69 \text{ GPa}$, which is within the claimed range. The rationale is as follows: one of ordinary skill in the art would have been motivated to maintain a rigidity comparable to that of a suspension having an aluminum constraining layer in order to prevent the spring constant from being too high as taught by Nakamura et al (see col. 2, lines 14-21).

As recited in claim 1, Nakamura et al further teach the desirability of increasing damping (see especially col. 5 line 21, "having superior damping effect" and response to arguments below).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to increase damping capacities of the laminates of Aoyagi et al to within the claimed range as taught by Nakamura et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to achieve superior damping as taught by Nakamura et al (see col. 5, line 21) so as to suppress vibration as taught by Nakamura et al (see col. 1, line 20, "suppressing its vibration").

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other numerical limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding claim 2: See teachings and rationale above for claim 1.

As recited in claim 3, Aoyagi et al show that the first structural damping material (including stainless steel (23 and 33), copper (31), and other materials (34), such as those listed in col. 4, lines 6-8) and the second structural damping material (including stainless steel (23 and 33), copper (31), and other materials (34), such as those listed in col. 4, lines 6-8) are substantially identical in composition.

As recited in claim 5, Aoyagi et al show that the hinge component applies a preload (see col. 2, line 22, "load") on the transducing head through the beam component.

As recited in claim 6, Aoyagi et al show that the entire hinge component is substantially made from the first structural damping material (including stainless steel (23 and 33), copper (31), and other materials (34), such as those listed in col. 4, lines 6-8) only.

As recited in claim 7, Aoyagi et al show that the entire gimbal component 24B is substantially made from the second structural damping material (including stainless steel (23 and 33), copper (31), and other materials (34), such as those listed in col. 4, lines 6-8) only.

As recited in claim 8, to the extent understood, Aoyagi et al show that the hinge component has no external structural damping material attached thereto (insofar as all structural damping material is an integral part of the head suspension, it is not "external").

Regarding claims 9-10: See teachings and rationale above for claim 1.

As recited in claim 11, Aoyagi et al show that the first structural damping material (including "stainless steel", see col. 3, lines 23-25) is (inherently) an alloy.

As recited in claim 12, Aoyagi et al show that the first structural damping material is a laminate comprising a stainless steel layer (including 23 and 33) and a damping material layer 24.

Regarding claims 13-15: The product by process limitations in these claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

Regarding claim 16: See above for claim 1. See also above regarding product-by-process limitations. See also above regarding integration and separation of known parts.

As recited in claim 16, in addition to the above teachings, Aoyagi et al show the gimbal component for connecting to a slider 25 assembly carrying a transducer (see col. 3, line 36, “slider 25 including the read/write head”).

Regarding claim 18: See teachings above for claim 11.

Regarding claim 19: See teachings above for claims 1-2 and 9-10.

Regarding claim 20: See teachings above for claim 3.

As recited in claims 26 and 28, Aoyagi et al show that the first structural damping material (including 34) is a composite.

Regarding claims 27 and 30: See teachings above for claim 12.

As recited in claims 29 and 32, Aoyagi et al show that the second structural damping material (including “stainless steel”, see col. 3, lines 23-25) is (inherently) an alloy.

As recited in claim 31, Aoyagi et al show that the second structural damping material (including 34) is a composite.

Response to Arguments

6. Applicant's arguments filed October 10, 2007, have been fully considered but they are not persuasive.

Applicant's arguments are based upon an interpretation of Aoyagi et al that treats Aoyagi et al's stainless steel layer alone as the first structural damping material.

Currently, the Examiner makes clear that the first structural damping material includes multiple layers (stainless steel (23 and 33), copper (31), and other materials (34), such as those listed in col. 4, lines 6-8, “polymide, epoxy resin, polyetherurethane, rubber, silicone rubber, polyvinylchloride or polybutadiene”). The limitation “structural damping materials” is broad enough to encompass a laminate, as evidenced by Applicant's claim 12, for example (“the first structural damping material is a laminate comprising a stainless steel layer and a damping material layer”). Similarly, the second damping material is interpreted as including multiple layers.

Although the materials disclosed by Aoyagi et al for layer 34 are dampers, the reference is silent regarding the numeric values claimed. The Examiner relies upon Nakamura et al to teach

the desirability of increasing damping, and the desirability of optimizing a modulus of elasticity in a steel-plus-damper laminate of a head suspension.

The existence of a stainless steel layer within the steel-plus-damper laminate suspension of Aoyagi falls far short of the sort of disclosure that would constitute a teaching away from providing the steel-plus-damper laminate of Aoyagi et al with numeric values in the range taught by Nakamura et al, which overlaps the range claimed by Applicant.

Applicant's arguments are thus non-persuasive.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Application/Control Number:
10/788,863
Art Unit: 2627

Page 9

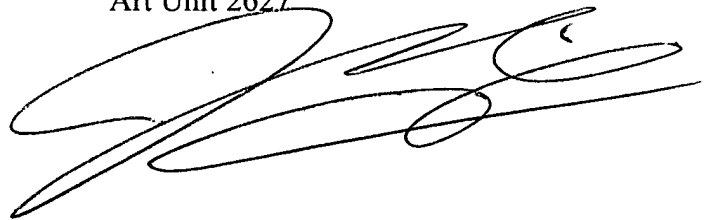
system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Mon & Fri, 9:30AM to 7:30PM, Tues-Thurs after 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko
Primary Examiner
Art Unit 2627

December 4, 2007
JAW

A handwritten signature in dark ink, appearing to be 'JAW', written over a horizontal line.